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THE UNIVERSITY OF ALBERTA

AN EXPLORATORY STUDY OF

MOTIVATIONAL PATTERNS IN WOMEN

A DISSERTATION

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT OF PSYCHOLOGY

BY

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## ABSTRACT

This is an exploratory study of motivation in several groups of women. No specific hypotheses were put forth, but underlying the project was the belief that women are motivated toward goals consistent with their feminine social role. As marriage remains society's traditional role for women, it was postulated that feminine motives would be likely to center on this area.

A survey blank, made up of a number of incomplete sentences, was given to a group of thirty first-year university women, to forty single business girls, and to one hundred and sixty married women, who ranged in age from 17 to 60 years. Preliminary study of the data led to the establishment of six "motivational" categories designated as; marriage and family, social acceptability, career, self-improvement, material goals, and competitive success. Scoring criteria were set up, and all the data were coded into these categories. The factor of age was studied first by dividing the married women into "younger" and "older" groups and comparing the two groups as to the relative strength of each of the six categories. Comparisons were then made between the university, business, and married women, and finally married women with higher education were compared with those lacking higher education.

No significant differences were found between "younger" and "older" married women on any of the six categories, so that age differences





had no apparent effect on the general response pattern.

Significant differences at the 1 per cent level of confidence were obtained between the married women and university girls on five of the six categories, with "marriage and family" and "material goals" being relatively more important to the married women, and "social acceptability", "career", and "competitive success" more important to university girls. Essentially the same results were obtained in comparing the married women with the business girls.

Significant differences at the 1 per cent level of confidence were obtained between the university group and the business group on only two of the six categories, with university women indicating greater emphasis on competitive success, and business women placing more emphasis on material goals.

Within the married group, possession of higher education appears to make little difference, only one category being significant. Material goals were more strongly emphasized by married women lacking higher education than by those possessing it, and this difference was significant at the 1 per cent level of confidence.



## ACKNOWLEDGEMENT

Grateful acknowledgements are made to all who have helped the writer to bring this project to completion, particularly Dr. R.C. Miles and Dr. C.N. Uhl. Sincere appreciation is also expressed to Prof. D. Schonfield for his many helpful suggestions, and to Miss M. Simpson, the former Dean of Women, with whose help the university subjects were obtained. Thanks must also be expressed to the many women who willingly served as subjects in the survey.



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## INTRODUCTION

### Theoretical Considerations:

As indicated by the title page, this study is concerned with human motivation. Its specific aim is to explore the relative importance of several learned goals or learned incentives in women rather than to focus on the processes by which these goals are acquired. "Goal" or "incentive" will be used interchangeably by this writer to refer to the end result, immediate or remote, which an individual is trying to obtain, such as finding food, becoming a great actor, acquiring wealth, earning degrees, etc.

The term "motive" is usually taken to be synonymous with "drive", but in the past neither term has been defined so as to receive universal acceptance among psychologists. The term drive is generally conceived as a convenient way of referring to the effects of deprivation and satiation and of other operations which alter the probability of behavior in more or less the same way (Skinner, 1953). It is a construct that accounts for behavior exhibiting a given state of strength independent of learning. Many questions regarding drives appear amenable to research when restated in terms of deprivation and satiation.

In studying human behavior one is particularly concerned with behavior that is learned, the amount of unlearned behavior being very limited. But while there has been considerable motivational research concerned with the biogenic or primary drives, "higher-order" human motives have presented problems both in research planning and in theorizing. While the hunger drive can be accounted for as the result of so many



hours of food deprivation, it is not so readily stated that the "drive for money" is due to so many hours, weeks, or years of money deprivation. A similar statement may be made regarding many goals toward which humans strive, such as fame, prestige, erudition, etc. Relating these behavior patterns to a set of establishing operations has proven a difficult task. In our affluent society most people suffer few if any primary deprivations for any length of time and the goals for which they strive often seem far removed from primary rewards. That the various incentives toward which different individuals respond is a result of their past experience has long been recognized. The question is how do goals such as "money", "prestige", "achievement", etc. become acquired, and how are they related to the concept of "deprivation-drive"? A number of motivational theories have attempted to provide some explanation to account for the acquisition of "higher-order" motives. Two theories will be given brief attention here, the first because of the prominence it has achieved, and the second because of its relationship to the subject matter of this thesis.

One of the first attempts to systematize motivation is found in the work of C. L. Hull (1943). His model of motivation might be described as a need-drive-incentive pattern. In its simplest form it asserts that physiological needs are created by deprivation and that these needs give rise to tension states known as drives. Drives in turn energize the organism into action until a related goal-object (incentive) is attained. Response to the goal-object (the consummatory response)





reduces the drive by satisfying the need. Hull conceptualized behavior as being the result, in large measure, of the interaction of two variables, drive (D) and habit strength (H). In its simplest form this relationship may be expressed in the following familiar equation,  $E = D \times H$ , where E stands for excitatory potential, D for drive, and H for learned associative tendencies. Hull assumed that drive combines multiplicatively with any reactive tendency, learned (H) or unlearned, (U) to yield a response determining resultant called excitatory potential, which though modified by other factors, is more or less directly reflected in behavior. Drive results from a manipulation of certain variables (e.g. food deprivation), but in Hull's view, drive is not regarded as a director of behavior but only as a broadly acting energizing process. The direction controlling functions are due to habit strength.

It should be pointed out that Hull's theory is essentially a reinforcement theory. Reinforcement refers to the well established finding that certain stimuli when presented (positive reinforcer) or removed (negative reinforcer) strengthen responses, i.e. increase the probability or frequency of their occurrence. In Hull's view learning is an increasing function of the number of reinforcements. Stated more specifically, habit formation and habit strengthening are dependent on a contiguous stimulus-response connection associated with reinforcement, and this is the only condition under which learning can take





place (Hull, 1943, p. 114). Reduction in drive-strength (or reduction in drive-stimuli) is essential to reinforcement. Primary reinforcement is brought about by the decrease in the stimuli produced by a drive, for example, the removal of a noxious stimulus, or the reduction of hunger pangs.

In dealing with the behavior of the higher species Hull attached considerable importance to the principle of secondary or conditioned reinforcement in explaining learning which seems to occur with no associated primary need reduction.

"These reinforcements are explained by the discovery that the power of reinforcement may be transmitted to any stimulus situation by the consistent and repeated association of such stimulus situation with the primary reinforcement which is characteristic of need reduction. Moreover, after the reinforcement power has been transmitted to one hitherto neutral stimulus, it may be transferred from this to another neutral stimulus, and so on in a chain or series whose length is limited only by the conditions which bring about the consistent and repeated associations in question." (Hull, 1943, p. 97).

Secondary reinforcement is not given extensive treatment in Hull's theory. Although secondary reinforcement did not have to be drive-reducing, Hull believed its effectiveness to wear off unless it was sustained by association with primary reinforcement, so that the mechanism of primary reinforcement remained of central interest. While helpful in accounting for a great deal of behavior, to some writers (Harlow, 1953; McClelland, 1953), secondary reinforcement still did not seem adequate to the task of explaining much uniquely human behavior, particularly that which falls under the category of

(1) The first part of the paper is devoted to the study of the properties of the function  $f(x)$  defined by the equation  $f(x) = \int_0^x f(t) dt$ . It is shown that  $f(x)$  is a constant function, and its value is determined by the initial condition  $f(0) = 1$ .

(2) In the second part, we consider the function  $g(x)$  defined by the equation  $g(x) = \int_0^x g(t) dt$ . It is shown that  $g(x)$  is a constant function, and its value is determined by the initial condition  $g(0) = 1$ .

(3) The third part of the paper is devoted to the study of the properties of the function  $h(x)$  defined by the equation  $h(x) = \int_0^x h(t) dt$ . It is shown that  $h(x)$  is a constant function, and its value is determined by the initial condition  $h(0) = 1$ .

(4) In the fourth part, we consider the function  $k(x)$  defined by the equation  $k(x) = \int_0^x k(t) dt$ . It is shown that  $k(x)$  is a constant function, and its value is determined by the initial condition  $k(0) = 1$ .

(5) The fifth part of the paper is devoted to the study of the properties of the function  $l(x)$  defined by the equation  $l(x) = \int_0^x l(t) dt$ . It is shown that  $l(x)$  is a constant function, and its value is determined by the initial condition  $l(0) = 1$ .

(6) In the sixth part, we consider the function  $m(x)$  defined by the equation  $m(x) = \int_0^x m(t) dt$ . It is shown that  $m(x)$  is a constant function, and its value is determined by the initial condition  $m(0) = 1$ .

(7) The seventh part of the paper is devoted to the study of the properties of the function  $n(x)$  defined by the equation  $n(x) = \int_0^x n(t) dt$ . It is shown that  $n(x)$  is a constant function, and its value is determined by the initial condition  $n(0) = 1$ .

(8) In the eighth part, we consider the function  $o(x)$  defined by the equation  $o(x) = \int_0^x o(t) dt$ . It is shown that  $o(x)$  is a constant function, and its value is determined by the initial condition  $o(0) = 1$ .

(9) The ninth part of the paper is devoted to the study of the properties of the function  $p(x)$  defined by the equation  $p(x) = \int_0^x p(t) dt$ . It is shown that  $p(x)$  is a constant function, and its value is determined by the initial condition  $p(0) = 1$ .

(10) In the tenth part, we consider the function  $q(x)$  defined by the equation  $q(x) = \int_0^x q(t) dt$ . It is shown that  $q(x)$  is a constant function, and its value is determined by the initial condition  $q(0) = 1$ .

"social incentives".

A number of modifications and adaptations of Hull's theory have been offered and it remains the most explicitly structured and probably the most influential of existing views. Brief attention will now be turned to quite a different approach to motivation, which nevertheless has some resemblances to Hull's theory. This is the affective-arousal model proposed by McClelland (1951) and given more elaborate form in collaboration with his associates (McClelland et al., 1953). McClelland's venture into motivational theorizing was prompted chiefly by his dissatisfaction with drive-reduction theories because of their emphasis on the predominantly negative role of incentives, and their failure to satisfactorily account for activity directed toward obtaining pleasure, as well as avoiding pain. McClelland objects, for example, to the drive-reduction interpretation that an organism eats not because food tastes good but in order to end hunger pangs, particularly when this interpretation is applied to human behavior. He is especially concerned with devising a theory which will satisfactorily solve some of the acquired drive problems, and he feels a biological need theory unable to account for the extraordinary persistence and strength characteristic of learned human motives.

"... Despite all the arguments about continued partial reinforcement, it remains difficult (though not impossible) to conceive of a social motive like the achievement drive as continuing to be influential in

1. Introduction

The first part of the report deals with the general situation.

The second part of the report deals with the specific situation.

The third part of the report deals with the results of the study.

The fourth part of the report deals with the conclusions of the study.

The fifth part of the report deals with the recommendations of the study.

The sixth part of the report deals with the bibliography of the study.

The seventh part of the report deals with the appendix of the study.

The eighth part of the report deals with the summary of the study.

The ninth part of the report deals with the index of the study.

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The twenty-second part of the report deals with the list of references of the study.

a man's life because it brings him food, shelter, and relief from tissue needs" (McClelland et al., 1953, p. 17).

McClelland accepts as basic that we seek activities that are pleasurable because we enjoy the pleasurable state that they excite in us, and we dislike and avoid other activities precisely because they are annoying or unpleasant to experience. He substitutes affective arousal for drive-reduction and all motives are said to be cued by changes in affective situations. In his view, two affective states of the organism serve as important motivators. One of these is negative (fear or anxiety) and the other is positive (anticipation of rewards, appetite). Both of these states are learned reactions, and motive he defines as the "reintegration by a cue of a change in an affective state" (McClelland et al., 1953, p. 28). An individual would have a fear or anxiety motive if, when exposed to cues that have previously been followed by punishment, he experiences an affective arousal similar to, or representative of, the arousal produced by pain or punishment. Similarly, an organism has a hunger motive when, as a consequence of repeated eating experiences the internal cues accompanying deprivation or external cues (or both) arouse an affectively toned expectancy of the pleasurable consequences of eating. All motives, therefore, are learned, and the unlearned primary affective state that provides the basis for affective conditioning does not qualify as a motive. Whether or not this unlearned primary affect has

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motivating effects McClelland does not state.

McClelland's theory is a return to an earlier hedonistic point of view, although he is attempting to build the theory on sound research. It is possible to draw some analogies between his theory and Hull's formulations.

"It would seem that a motive in McClelland's terms is roughly equivalent to Hull's excitatory potential (E) in the sense that both conceptions are composites of associative (habit) factors and motivating (drive) factors. Just as Hull's E, which equals  $H \times D$  would have a zero value if the habit strength (H) were zero, so too, McClelland's motive would be non-existent until a habit had been formed, even though some primary affect (D ?) were present. Identifying McClelland's motive with E makes it easier to understand why he insists that all motives guide behavior and are learned - this is the H part. It is uncertain, however, whether the motivating effects of McClelland's motives can be closely equated to D since no clear descriptions are provided of what a motive does in its role as a motivational determinant of behavior" (Brown, 1961, p. 181).

While McClelland's concern with the inadequacy of the need-drive-incentive pattern in explaining such motives as the "achievement motive" was to some degree justified in 1951, his criticism today is less cogent. Recent advances both in theory and research have led to an extension of the principle of secondary reinforcement to include a phenomenon known as generalized reinforcement (Skinner, 1953; Kanfer and Matarazzo, 1959; Lundin, 1961; Wunderlich, 1961). With the aid of this new concept, acquired drives such as the achievement motive are able to be related to "deprivation-drive" in a more convincing manner than previously, and the concept therefore provides a more suitable frame-of-reference for integrating the data

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of the present study. There are several reasons why this alternative frame-of-reference has been chosen rather than interpreting the data within the context of McClelland's theory. Firstly, it might be mentioned that the present project was undertaken in order to throw some light on certain of McClelland's research findings, and not because of any interest or affinity for his theoretical formulations. The findings of this study are able to stand on their own as empirical data about human motivation, and do not necessarily require interpretation within any particular frame-of-reference. Realizing, however, that the data become meaningful and significant if related to a general theory of motivation, a choice did arise. This choice was influenced by the writer's feeling that the "law of effect" represents a more contemporary and fruitful approach to motivation than a return to what might be called a "law of affect", and therefore an attempt was made to account for the data in terms of reinforcement theory.

That there are a number of reinforcers available to human beings is readily apparent. The question of how learned goals are acquired is really the question of how neutral or initially non-reinforcing stimuli become reinforcing. As mentioned previously, this phenomenon, secondary or conditioned reinforcement, refers to the fact that a stimulus which is not originally a reinforcing one can become reinforcing through repeated association with one that is (Bersh, 1951;



Hall, 1951). Research has also shown that once established, a secondary reinforcement can strengthen other responses than that used during its original establishment (Skinner, 1938), and can do so under other motives (deprivations) than that prevailing during the original training (Estes, 1949; Keller & Schonfeld, 1950; D'Amato, 1955).

There are several secondary reinforcers that are common to many people because they have been exposed to similar learning experiences. Of these are a group referred to as generalized reinforcers (Skinner, 1953; Lundin, 1961). A secondary reinforcer becomes a generalized one when it is paired with more than one primary reinforcer, and it is especially effective because the momentary drive-condition of the organism is not likely to be important. Although the generalized reinforcers have their origin in the primary ones, they eventually become effective even though no longer accompanied by the primary reinforcers upon which they are based. Generalized reinforcers are frequently the result of social behavior in that behavior of another person is necessary for reinforcement. Five kinds of generalized reinforcers have received note. They include attention, approval, affection, submission of others, and tokens, the latter being distinguishable by their physical dimensions (Lundin, 1961). Money is probably the most common example of a generalized reinforcer. Because it can be exchanged for a great variety of primary

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reinforcers its function seldom dies out. Also, possessing money may result in the individual securing other generalized reinforcements, for the wealthy individual may be further reinforced by the attention, approval, and submission of others.

The importance of generalized reinforcers is due to the fact that they are effective under a number of deprivation conditions, some of which are likely to be present at any given time. But one cannot really speak of a drive for attention, approval, affection, domination, or money, for although people may be strongly reinforced by generalized reinforcers even in the absence of primary reinforcement, it is difficult to specify appropriate operations of deprivation and satiation. In dealing with the learned drives, one cannot utilize deprivation until the learning has taken place. Removing a person's money, for example, before he has learned of its value, cannot arouse a drive for money. It may be that the "important motivating component of many of the supposed acquired drives for specific goal objects is actually a learned tendency to be discontented or anxious in the absence of those goal objects. On this view, stimulus cues signifying the lack of affection, a lack of prestige, insufficient money, etc. would be said to acquire, through learning, the capacity to arouse an anxiety reaction having drive properties. This learned anxiety would then function to energize whatever behavior is directed toward goal objects by stimuli, and its reduction following the achievement of





those goals would be powerfully reinforcing" (Brown, 1953).

In the present project no attempt was made to manipulate directly either drive or incentives, the major focus being on what learned incentives, i.e. generalized reinforcers seem of most importance to women.

#### Background of the Present Project:

This thesis project has grown out of the writer's acquaintance with the work of D.C. McClelland, who was impressed with the need for a sound method of studying human motivations, of the "secondary" or acquired type and focused his research efforts on the "achievement motive" which he feels to be one of the most important human motives. The achievement motive is defined as "a learned, affective anticipation of the pleasurable consequences of success in situations where the quality or efficiency of one's performance is to be evaluated" (McClelland et al., 1953). The actual criteria employed by McClelland to measure the strength of the "achievement motive" are based on the competitive process, and considerable emphasis is placed on competition toward unique accomplishment and toward vocational success (See Appendix "A").

McClelland and his coworkers (1953) have devised a procedure for arousing, manipulating and measuring the motive in a relatively controlled setting. In their work they were guided by two ideas. From





psychoanalytic thinking about motivation they accepted the hypothesis that an individual's goals, strivings, and motivations are deducible from his fantasy productions. They also accepted the notion from experimental studies of animals that motives could be experimentally aroused and their intensity controlled by manipulating arousal conditions. McClelland's usual method of arousing the "achievement motive" in his subjects is by making reference to the importance of intelligence and leadership ability in getting ahead, and then by evaluating the subjects' performance on certain tasks which they are told are supposed to require such abilities. In effect this results in a subject becoming ego-involved, and being faced with what he sees as a "success-failure" judgment. Immediately after this threatening or ego-involving situation, the subject is asked to write stories to several TAT pictures which are then scored for achievement content using an objective and detailed scoring system designed to assess competitiveness.

It should be mentioned that the large body of research upon which McClelland and his associates based their book The Achievement Motive was carried out exclusively on college male freshmen in introductory psychology courses. As such subjects might be considered representative of males of the middle socioeconomic layers of our society, it might be expected that the achievement motive would be found in its most intensive form in this group. Generalization of



these results to males in non-academic settings and in lower socio-economic groups possibly is not warranted.

In the course of their research McClelland and his associates (1953) attempted to apply their method of arousing and measuring the "need for achievement" (sometimes referred to as n Ach) to women and were at a loss to account for the paradoxical results which they obtained. Using the same procedure as used with men they failed to demonstrate the expected increase in n Ach score accompanying achievement arousal which they had demonstrated with male subjects. After several attempts at altering the arousal conditions, Field (1951) found that by threatening women's social acceptability a measure of n Ach could be obtained using the original scoring criteria, but even then the women's mean n Ach scores were significantly lower than the men's. For reasons not yet well understood "results obtained with male subjects have to date not been replicated with women when the same procedure is employed" (Brown, 1961). No satisfactory explanations to account for this have been offered although McClelland, et al., (1953) do mention that the failure to duplicate results on female subjects may be due to the "different expectations involved in achievement motivation for men and women in our culture ..... Concern with these differences in the types of expectation involved in an achievement motive should lead to an exploration of different types of achievement motivation. For example, our own data have



indicated that some people appear to be actuated more by a hope of success, others by fear of failure. We have further speculated that for some people achievement motivation may be tied up primarily with expectations about athletics, for other people with their job, and for still others with their bridge playing, and so on."

It is this writer's contention that the inability to replicate the results obtained with male subjects when applying the system to females is because the "achievement motive" when viewed as a generalized reinforcer is best considered a predominantly masculine phenomenon. In its popular usage the word achievement has a broader meaning than as used by McClelland. In general usage it is taken to mean "accomplishment" in virtually any endeavor or undertaking. McClelland might more appropriately have termed the motive he was studying the "competitive motive" in view of the fact that his scoring criteria were devised to detect competitive themes, that is, stories in which the competition was engaged in just for the sake of winning or doing better than others. As McClelland's "achievement motive" is really a measure of competitive effort in the academic and career areas, this writer is not surprised that women score lower in n Ach for this type of success is not expected of them in our culture to the same degree as it is of men. It is possible that achievement means a very different thing for women than for men. For this reason the writer prefers to use the term achievement in





its more common usage, that is, in the sense of "accomplishment", and to assume that the "need for achievement" is probably strong in both women and men, but that it takes a different direction in the sexes, that is, it is directed toward different goals. The very fact that women's n Ach scores increase when they are faced with possible social rejection, but, unlike men, show no significant change when their intelligence or leadership qualities are threatened, suggests differences in the motivational incentives to which men and women respond, and also suggests as one possibility, that women's achievement may be more closely related to social acceptability than to competitive activity as defined by McClelland.

In approaching the problem of achievement motivation the writer intends to view achievement in relation to the concept of generalized reinforcers discussed previously. That achievement may mean quite different things to different groups of people is accepted, as well as the fact that an individual's concept of success will usually reflect his social training and the values of the particular culture in which he was reared (Weber, 1904; Mead, 1935, 1955; McClelland, 1955). Regardless of the differences which may exist in types of achievement motivation, it seems reasonable to assume that if an individual succeeds in his effort to achieve, this success conceivably may result in the attaining of a number of goals, and in this sense "achievement" may become a generalized reinforcer. For example, a boy may

The first part of the report, which is the most important, is the one that deals with the results of the investigation. It is the one that the reader is most interested in, and it is the one that the writer must write with the greatest care and attention. It is the one that the writer must write in a clear and concise manner, and it is the one that the writer must write in a way that is easy to understand. It is the one that the writer must write in a way that is interesting and engaging, and it is the one that the writer must write in a way that is informative and useful. It is the one that the writer must write in a way that is accurate and reliable, and it is the one that the writer must write in a way that is honest and truthful. It is the one that the writer must write in a way that is professional and polished, and it is the one that the writer must write in a way that is well-organized and well-written. It is the one that the writer must write in a way that is clear and concise, and it is the one that the writer must write in a way that is easy to understand. It is the one that the writer must write in a way that is interesting and engaging, and it is the one that the writer must write in a way that is informative and useful. It is the one that the writer must write in a way that is accurate and reliable, and it is the one that the writer must write in a way that is honest and truthful. It is the one that the writer must write in a way that is professional and polished, and it is the one that the writer must write in a way that is well-organized and well-written.



learn that when he is willing to compete with others for certain goal objects, he not only may win the goal objects, but may be reinforced in other ways as well. In the same way a girl child may learn the value of certain goal or goals not only for their intrinsic value but because in attaining them she may win attention, approval, affection, prestige, security, etc.

### Importance of the Problem:

Precise information concerning human motivation remains quite limited and most of the rather meager research output has been done with male subjects. The generalizability of these results to women is not established. McClelland's research was centered on what is really a masculine phenomenon and his measuring instrument was devised using only males as subjects, yet he was perplexed when results with female subjects were so different. Interpreting his findings is difficult for at present we have virtually no normative data concerning the goal-incentives most prized by women.

McClelland's methodology appears to represent a productive approach to the study of human motives, and in his work one sees the hopeful synthesis of such diverse approaches as psychoanalytic thinking, "projective psychology", and controlled experimentation. This writer would like to see further application of his methods to the study of feminine motivation, but before this can be done, it is neces-



sary to know more about the goal-incentives which are important to women.

#### Specific Purpose of the Study and Statement of the Hypothesis:

This study will represent an attempt to determine what "goals" are expressed as being important in several variant groups of women and the relative strength of these goals, that is, their approximate "positions of importance" in a rank order hierarchy. In a sense this is an exploratory study, but it is based on the general hypothesis that women have a "need to achieve" (i.e. to accomplish) just as men do, but that their behavior is directed toward different incentives than it is in men (i.e. that their behavior is directed toward achieving different generalized reinforcers than sought by men). Although a more specific hypothesis is unnecessary in an exploratory project, it is ventured nevertheless that the achievement goals most important to women in general probably will prove to be related to the feminine role of marriage and motherhood, rather than to the more masculine role of competition and exploitation.

#### Survey of the Literature:

Although much work has been done on social attitudes, interests, temperament, personality characteristics, values, etc. in devising and standardizing tests, much of this is only vaguely related to the problems of motivation and achievement. Quantitative studies of

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feminine goals are noticeably absent in the literature, although there has been considerable theoretical discussion and a priori assumptions concerning feminine motives with virtually no attempt to further verify these through research (e.g. Deutsch, 1945; Klein, 1946; Lundberg & Farnham, 1947). Some of the literature on sex differences could have relevance to the problem of achievement but such material is not included here for this project is not directly concerned with determining sex differences in achievement, instead such differences are assumed and this area is left for future research.

A comprehensive review of the literature indicates that the present project has not been undertaken before. Both in purpose and method the present project represents something of a departure from the usual approach. In its method it makes use of a technique that only in recent years has begun to acquire research value, the Incomplete Sentences device. As to purpose, it seems to be one of the first attempts to study not a single motive, but to determine instead the pattern and relative strength of various "goals" in women, using a relatively unstructured instrument. Because of the lack of quantitative research on feminine motives, it is appropriate that this



project has taken the form of an exploratory study.





### III

#### METHOD

##### A. Measuring Instrument.

As the writer was interested in determining the "goal-incentive" patterns peculiar to several groups of women and the relative importance of each goal, and as he did not want to make any a priori assumptions about the goal patterns, it was felt that an unstructured or "projective" method which permits a wide variety of statements would be suitable. Of the various methods that might be employed, the incomplete sentence approach was selected because of its simplicity and the fact that it imposes minimal limits on the choice or type of answer given. The instrument devised here takes the form of a two page "survey blank" consisting of twenty-two incomplete sentences with the instructions for completing the blank printed on the first page. Some of the incomplete sentences employed were drawn from various tests, including Rotter's Incomplete Sentences Blank, others were made up by the writer, an effort being made to select only those which seemed most likely to elicit motivational content, but which would not, as judged by the experimenter, favour the expression of one goal over another (See Appendix "B").

##### B. Subjects.

Three groups of women were sampled, university first-year students living in residence, young unmarried business girls between the ages

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of 18 and 25 years of age, and married women ranging in age from 17 to 60 years. This latter group was obtained through door-to-door canvassing for volunteers. All individuals who offered to take part were given survey blanks to be filled out in their own time, and self-addressed, stamped envelopes were provided for their return.

TABLE 1  
FACULTY DISTRIBUTION OF THE FIRST-YEAR  
UNIVERSITY STUDENTS

Faculty or School	Number
Arts & Science (B.A.) .....	6
Arts & Science (B.Sc.) .....	9
Education: B. Ed. ....	11
Jr. E. ....	<u>4</u>
Total	30

The university girls were all first-year students living in a university residence hall. Of ninety-five girls asked to take part, only thirty completed and returned the blank, so that the sample represents a population of first-year University of Alberta girls who are willing to fill out and return such a form. The "business" group consisted of 40 young, unmarried women between the ages of 18 and 25, employed as stenographers in various types of business establishments. To obtain the married subjects, several "middle-class" neighbourhoods in the city of Edmonton were canvassed, the writer explaining the project and leaving survey blanks to be filled out and returned. One

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hundred and sixty subjects were obtained in the married group. It might be mentioned that only 200 out of 670 survey blanks given to business and married women were returned, a rate of return of not quite 30%. The samples therefore represent populations of business and married women, respectively, who would return such a blank.

TABLE II

AGE DISTRIBUTION OF THE ONE HUNDRED AND SIXTY  
MARRIED WOMEN

Age Range	Number
17 - 21 .....	11
22 - 26 .....	45
27 - 31 ./.....	21
32 - 36 .....	23
37 - 41 .....	22
42 - 46 .....	19
47 - 51 .....	10
52 - 56 .....	7
57 - 60 .....	2
Total	<u>160</u>

### C. Treatment of the Data

Before describing the methods by which the raw data were analyzed, brief mention should be made of the methodological and conceptual difficulties one faces in categorizing verbal responses and relating them to acquired motives and goals. In the present study, degree of drive or motivation was not defined by the manipulation of an external variable, but in terms of individual differences in responses to incomplete sentences on a survey blank, the basic assumption being that

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do hereby certify that \_\_\_\_\_ is a \_\_\_\_\_ of \_\_\_\_\_

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II

I, \_\_\_\_\_, of the County of \_\_\_\_\_, State of \_\_\_\_\_,

do hereby certify that \_\_\_\_\_ is a \_\_\_\_\_ of \_\_\_\_\_

Witness my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

Notary Public for the State of \_\_\_\_\_

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Notary Public for the State of \_\_\_\_\_

I, \_\_\_\_\_, of the County of \_\_\_\_\_, State of \_\_\_\_\_,

do hereby certify that \_\_\_\_\_ is a \_\_\_\_\_ of \_\_\_\_\_

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if individual A gives a relatively larger number of responses pertaining to a particular goal than individual B, A can be considered more interested in the goal than B, and more highly motivated to attain it. Each subject's responses to the blank were scored by counting, according to certain rules, the number of items believed to be indicative of a specific motive. Groups of subjects were then rank-ordered with respect to the strength of a given motive as defined by the frequency of motive relevant reactions to the incomplete sentences. However in using a response-based method of measuring drive, it must be remembered that the content of verbal responses may reflect two processes; firstly, an individual's "motivational-interest" patterns which are conceived as being primarily related to past rewards (i.e., frequency of occurrence and value of the incentive), and secondly, the associational processes, broadly conceived. The latter refers to evidence which indicates that frequency of association per se is a contributing factor (Solomon and Howes, 1951), so that motive strength as inferred from verbal responses in this study could be influenced to some degree by frequency of association.

In treating the raw data the first task was to categorize the various responses for statistical analysis. In order to deduce general trends from the varied 4, 842 statements, the raw data were grouped as follows: 1. Each statement was first placed into a category. 2. These initial categories, twenty-two in all, were then reduced to six through





the combining of groupings judged to be homogeneous and by eliminating infrequently occurring (less than 1%) classifications. The six final motivational categories that were applied to the raw data were designated as 1. Marriage and Family, 2. Social Acceptability, 3. Career, 4. Self-Improvement, 5. Material Goals, and 6. Competitive Success. Scoring criteria for all six categories were explicitly stated, these criteria being presented in Appendix "C". It should be mentioned that "Competitive Success" was defined exactly as McClelland defines his achievement motive except that career involvement was handled separately. Combining the two categories of "Career" and "Competitive Success" therefore yields a measure of n Ach in each subject and this allows a comparison with McClelland's results.

Occasionally a sentence would be completed with more than one statement. When this occurred only the first statement was tabulated so that the number of possible statements from each subject remained the same, that is, twenty. (Incomplete sentences numbers 17 and 18 tended to elicit unclassifiable material, so that these were omitted in actual coding of the data).

To test the reliability of the scoring categories, a random sample of thirty survey blanks were scored by two independent markers after two-and-one-half hours of discussion and practice with the scoring sheets. Spearman's rank-difference correlation method was



utilized yielding correlations between the two independent markers for the six categories being scored as shown in Table III. Without exception these correlations are significant at the .01 level.

Statements classifiable within each of the six final categories were tabulated as to frequency and subsequently ranked. The category having the highest frequency was given the rank of one, that with the second highest frequency the rank of two, etc. With all the data transformed into ranks, the comparisons between different groups as to the same category could be made.

To test for the amount of "overlap" versus "independence" between categories, a random selection of twenty-five subjects was taken and rank order correlations among classifications were computed. Subjects were ranked from low to high on "Marriage and Family" and "Social Acceptability", for example, and then rank order correlations were done. The results are shown in Table IV.

The effect of age on the response pattern was the first factor to be investigated. As the married group was the only one with a large age range, (17 to 60), it was decided to look at this group more closely. The married subjects were divided into two age groups, 17 to 38 years, and 39 to 60 years of age. Using chi-square in a 2 X 2 contingency table, the number of individuals in both the "young" and "older" group were counted who ranked in "marriage" or "social acceptability" as above or below the median of the distribution of that



particular motivational category for the two groups combined. Chi-square were computed to test differences between the "young" and "older" married group for all six motivational categories.

Using a similar chi-square analysis, the three groups, "married", "business", and "university" women were then compared as to the relative importance they attributed to each of the six motivational categories. In order to more specifically attribute the source of significance, 2 X 2 analyses were then done.





# IV

## RESULTS

1.

TABLE III

RANK-DIFFERENCE BETWEEN TWO INDEPENDENT MARKERS  
FOR THE  
SIX MOTIVATIONAL CATEGORIES USED IN THIS STUDY

<u>Categories</u>	<u>Rho</u>
Marriage and Family	.93
Social Acceptability	.93
Career	.98
Self-Improvement	.73
Material Goals	.89
Competitive Drive	.94

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TABLE IV

SPEARMAN RHO'S AMONG THE SIX RESPONSE CATEGORIES

	<u>Social Accept- ability</u>	<u>Career</u>	<u>Self- Improve- ment</u>	<u>Material Goals</u>	<u>Competitive Success</u>
Marriage & Family	-.11	.04	-.20	.62**	.00
Social Acceptability		-.03	-.23	-.30	-.36*
Career			.00	.03	.25
Self- Improvement				-.50**	.28
Material Goals					-.21

With three exceptions, there seems to be fair independence between

I have been thinking of you very much lately  
 and wondering how you are getting on.  
 I hope you are well and happy.  
 I have been very busy lately but  
 I will try to write to you more often.  
 I am very fond of you and hope  
 you will write to me soon.  
 I am your affectionate friend,  
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I have been thinking of you very much lately  
 and wondering how you are getting on.  
 I hope you are well and happy.  
 I have been very busy lately but  
 I will try to write to you more often.  
 I am very fond of you and hope  
 you will write to me soon.  
 I am your affectionate friend,  
 I-

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the scoring categories employed in this study. However, a moderate positive correlation does exist between "marriage and family" and "material goals" which is somewhat difficult to account for unless women view marriage as a means of obtaining their material aspirations. The moderate negative correlations between "self-improvement" and "material goals" and between "social acceptability" and "competitive success" are intuitively understandable, for individuals who are busy studying Shakespeare, foreign languages etc. may be less concerned with conventional materialistic goals, and those interested in social success are more prone to emphasize co-operative than competitive behavior.

### 3. Age as a Factor Influencing Motivational Patterns in Women.

No significant differences were found between "young" and "older" married women as to the relative importance of any of the six categories under study. It appears therefore that age differences among the subject groups did not influence the general trends.

### 4. Comparison between Married Women, Single Business Women, Female First-Year University Students.

Significant differences at the 1% level of confidence were obtained in reference to the relative importance of all the response categories except "self-improvement". However the significant results appear attributable to large differences between the married group and the



other two groups, rather than to any difference between the two groups of single women. Marriage and family, and material goals were ranked as more important to the married subjects, and social acceptability, career, and competitive success appear more important to the two groups of single women.

5. Comparison between Female First-Year University Students and Single Business Women.

No significant differences were obtained between female first-year university students and business women in reference to the relative importance of marriage and family, social acceptability, and career.

Significant differences at the 1% level of confidence were obtained between the two groups as regards "material goals" and "competitive success". A significantly larger proportion of business women obtained a "high" rank for their interest in material things than did university girls. On the other hand, a significantly larger proportion of university girls had competitive success ranked higher than did the business women. Simply stated, working women seem more materialistic than university girls, but in general less competitive.

6. Married Women Compared with Female First-Year University Students.

Significant differences at the 1% level of confidence were obtained between married women and first-year university students on all of the categories under study (self-improvement being excluded).





Married women appear to place greater importance on marriage and family than do the single university girls, whereas for the university students, social acceptability and career goals appear more important. Married women are more conscious of material success, while university girls emphasize competitive success to a significantly greater degree.

#### 7. Married Women Compared with Unmarried "Business" Women.

As with the previous comparison, significant differences were obtained between married women and unmarried business women on all of the categories except self-improvement. A significantly larger proportion of married women had marriage and family ranked first than did the business women ( $p < .01$ ). Again, social acceptability was more important to the single working women than to the married individuals ( $p < .01$ ) as also was career ( $p < .02$ ). Married women are more concerned with material goals, this difference being significant at the 5% level of confidence, while the business women place more emphasis on competitive success than do the marrieds ( $p < .01$ ).

#### 8. Married Women with Higher Education Compared with Married Women lacking Higher Education.

Women with higher education were taken to mean those with two or more years of university. The only significant difference obtained between these two groups was in reference to material goals. A





significantly larger proportion ( $p < .01$ ) of married women lacking higher education placed greater emphasis on material things.

9. The relative importance of each motivational category in the three groups of women under study is shown graphically in Figure 1 where it can easily be seen that the response pattern of married women differs from the two single groups, university and business women. Marriage is by far the most important category with married women, while "career" and "competitive success" (which combined may be taken as a measure similar to McClelland's Achievement) are the least important. Marriage and family, social acceptability, and competitive success appear nearly equal in strength in university women and if one combines career and competitive success, McClelland's type of achievement motive becomes the most strongly represented category, in direct contrast to the married group. In the Business group, marriage and family, and social acceptability are closely tied as the strongest "motives", with self-improvement the next strongest. Career and competitive success are relatively low in order of importance, and when combined to form a measure of McClelland's Achievement Motive, the business group falls about midway between the married and the university women.



TABLE V

CHI-SQUARES SHOWING THE RELATIONSHIP BETWEEN SUBJECT GROUPS AS TO  
THE SIX RESPONSE CATEGORIES UNDER STUDY

GROUPS BEING COMPARED	RESPONSE CATEGORIES					
	Marriage and Family	Social Accept- ability	Career	Self- Improve- ment	Material Goals	Competitive Success
I  "Young" Married Women (17 to 38 years of age) ----- "Older" Married Women (39 to 60 years of age)	.031	.019	.257	2.471	.019	No Difference
II  Married Women ----- Business Women ----- University Women	55.537 **	14.709 **	9.966 **	1.760	28.303 **	50.736 **

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TABLE V (Continued)

GROUPS BEING COMPARED		RESPONSE CATEGORIES					
		Marriage and Family	Social Accept- ability	Career	Self- Improve- ment	Material Goals	Competitive Success
III	Female First-Year University Students  Single Business Women	1.032	1.385	1.625		8.750**	12.527**
IV	Married Women  Female First-Year University Students	44.758**	15.109**	7.823**		30.705**	28.327**
V	Married Women  Unmarried Business Women	43.552**	21.247**	6.534 (p .02)		4.256*	12.156**
VI	Married Women With Higher Education (2 or more years of University)  Married Women Without Higher Education	.138	.259	.715	.331	8.794**	.884

\* Significant at .05 level

\*\* Significant at .01 level

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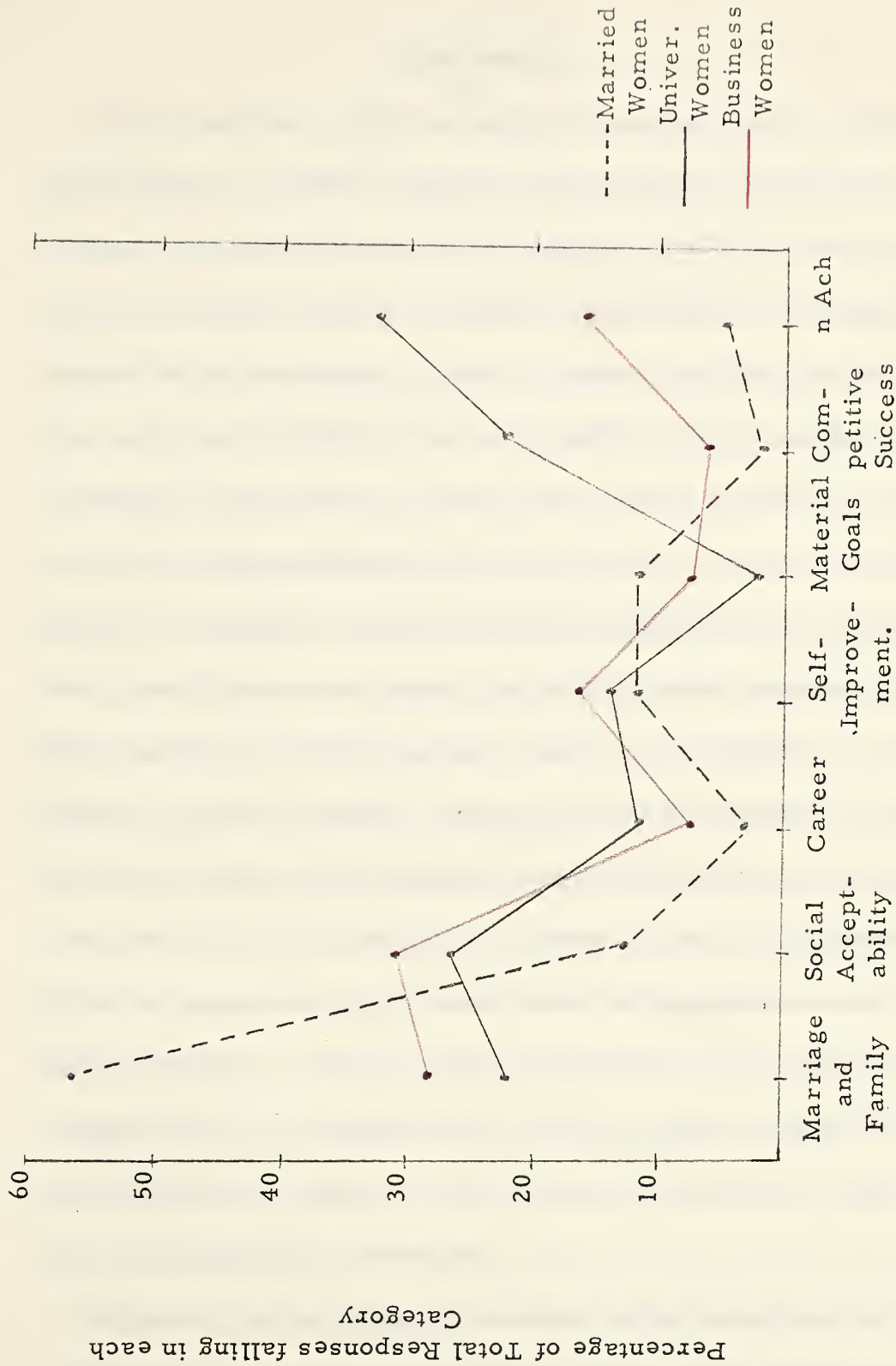
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RELATIVE IMPORTANCE OF EACH MOTIVATIONAL CATEGORY IN THE THREE GROUPS UNDER STUDY AS INDICATED BY THE PROPORTION OF THE TOTAL NUMBER OF RESPONSES IN EACH GROUP WHICH FALL IN A PARTICULAR CATEGORY



## DISCUSSION

In this study the relative strength of "motives" were inferred from the frequency of verbal responses classified into a specified category. It was assumed that the relative frequency of different verbal statements indicates response tendencies which differ in "strength", i.e., probability of occurrence. There is research evidence indicating that response probability may be a function of prior reinforcement frequency, current drive strength, and merely how often a particular event has occurred (number of associations). Due to the fairly large number of subjects it was assumed that differences in current drive state would balance out among the groups leaving frequency of previous rewards and "unrewarded" number of associations as determiners of response strength. Although it was not feasible to separate these two effects it was assumed that the differential verbal response frequencies may be primarily a function of past reinforcement histories because it is well established that organisms repeat reinforced behavior. The six goals studied here are not specifically related to any one biological drive and all could conceivably be means of obtaining other goals. In this sense they may possess the properties of a generalized reinforcer.

The most striking finding of this study is the importance of marriage and family to the women in all three groups. This suggests that

# CHAPTER I

The first part of the book is devoted to a general survey of the subject. It begins with a definition of the term "philosophy" and a discussion of its history. The author then proceeds to a survey of the various branches of philosophy, including metaphysics, epistemology, ethics, and political philosophy. The second part of the book is devoted to a more detailed examination of the various branches of philosophy. It begins with a discussion of metaphysics, which is the study of the nature of reality. The author then discusses epistemology, which is the study of knowledge. This is followed by a discussion of ethics, which is the study of morality. The final part of the book is devoted to a discussion of political philosophy, which is the study of the nature of government and society. The author concludes the book with a summary of the main points discussed in the preceding chapters.

woman's traditional role, that of wife and mother remains highly valued by them in today's modern world, despite fairly recent changes in the social status of women. From the emphasis placed on marriage responses by the subjects of this study, one might infer that marriage constitutes an extremely important part of their "achievement" motivation. The fact that marriage is so highly valued is undoubtedly because it is a goal possessing wide reinforcing properties. That this is so is not surprising when one realizes that marriage for a woman is a choice not only of a mate but also of a station in life. While women may desire to achieve more goals than ever before, the present findings suggest that marriage remains the ultimate goal, probably because women still see marriage as the best means of attaining the multiple goals they value. In our contemporary western culture, permeated as it is by the notion of "romantic love", a woman is allowed wide freedom in choosing a mate, and thereby in attaining a station in life. If a girl is wise or fortunate in her selection of a mate, she may be able to ensure that many of the goals she happens to value will be attained through her marriage. Marrying the "right" individual can therefore be conceived as attaining an important generalized reinforcer, for this event may lead to many reinforcements, both primary (e.g. shelter, sexual gratification, etc.) and acquired rewards such as affection, approval, position, prestige, wealth, and so on.

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The lessened emphasis on the goals of career and competitive success in married women indicates that in the marriage state such goal-directed activity may not be strongly reinforced, while other forms of behavior socially relevant to marriage and family are regularly reinforced and thereby strengthened. This adds support to the traditional notion that marriage and career, and marriage and competition are contradictory goals, i.e., alternative means of obtaining generalized reinforcers.

In the single women studied here, social acceptability was emphasized even slightly more than marriage, while in the married group, marriage is emphasized more than four times as often. For a single woman, social acceptability may be a definite asset in attaining the marriage state, for a young woman who is very sociable will have a better chance of meeting men, of dating, and of getting a mate who can subsequently provide the "good things" of life. Also possible is that attaining marriage for a woman is the ultimate way of being socially acceptable, so that once married the amount of reinforcement needed in the form of social acceptance from outside sources is greatly lessened.

Competition with others is a distinctive characteristic of certain spheres of activity, while it may be relatively unimportant in others. In any life situation where it is necessary to compete with others to attain desired goals, successful competition will be reinforcing and





the individual will learn to value competitive activity itself, but in situations where competition is unnecessary, such reinforcement will not take place and the individual will not be greatly concerned with the competitive process. Obviously the competitive demands made on a person in the work-a-day world are much greater than in the shelter of one's own home, and one would expect women who are holding down a job and supporting themselves to emphasize competitive success more than the housewife who is not required to compete directly with other men and women. The findings of this study bear this out, for competitive success is of minimal importance to the married subjects, both young and old, of some importance to the single business women, but most important to the university girls. That it ranks high among university girls is not surprising due to the competitive nature of university life itself and probably also because these girls are in direct competition with males for academic and social honours. It was to be expected that "competitive behavior" would be of lesser strength in the business girls, all stenographers, who are not really in competition with men for their jobs. However, because they are living in the work-a-day business world where competition is basic to the very businesses that support them, and because they are working in order to maintain themselves, they could little avoid showing a fair degree of this type of competitive effort.



That career was unimportant to the married group and relatively weak in the single group as well is not difficult to account for as long as the traditional role for women in society remains the marriage role and a girl child's upbringing is supposed to prepare her for this. A girl's acceptance of the "traditional" and expected role will undoubtedly result in her receiving more approval (i.e., reinforcement) from others than acceptance of a role that society considers less suitable for a woman. While it is true that success in the pursuit of a career may be conceived of as an alternative generalized reinforcer leading to such rewards as material gain, submission of others, etc., it is possible that these factors either possess less incentive value or are more improbable for a woman than the social approval she would gain through marriage, having a family, etc. The many problems that a career woman faces in adjusting to society's rather ambivalent attitude towards her have been discussed by several writers (Komarovsky, 1953; Mead, 1955). From their analysis of the career woman's status in contemporary society, these writers conclude that a woman who pursues a life long career not only suffers a loss of social approval but experiences rather subtle forms of societal criticism or condemnation.

Combining the career and competitive categories to give a rough index of the strength of McClelland's type of "achievement motive" in the three groups, it would seem that n Ach is most strongly represented in university girls, of some importance with the business



girls, but of little importance to married women. Again, if one does consider the marriage state as the fulfillment of the feminine role, it would seem that this type of competitive effort may be in opposition to femininity itself. As long as the role of women is not that of the provider, effort toward this type of attainment is unnecessary, and in many cases it might prove an impediment to the performance of the duties of marriage. As long as our society maintains that a woman's place is in the home, and as long as this role, the marriage state, continues to provide the main source of multiple reinforcement for women, it will be necessary to consider McClelland's "achievement motive" as largely a masculine phenomenon.





## VI

### CONCLUSIONS

1. The motivational pattern in married women differs from that found in non-married women, with "marriage and family" and "material goals" being emphasized significantly more by the married group, and "social acceptability", "career" and "competitive success" being significantly more important to the non-married group.
2. The non-married women appear to show a fairly similar response pattern whether they are university or business women. However, business girls are more materialistic, and university girls more competitive.
3. "The Achievement Motive" (McClelland's  $n$  Ach) appears of primary importance to university women, but of least importance to married women.
4. Age differences do not alter the response pattern significantly in married women.
5. Possessing a university education in itself appears to make little difference to the response pattern of married women, the only difference being that married women without the higher education indicated significantly more interest in material goals than did those with university.



## VII

### SUGGESTIONS FOR FURTHER RESEARCH

1. The question of the validity of the scoring categories which were applied to the treatment of the raw data has not been mentioned in the body of this paper. Validity studies would have required time and resources beyond the scope of a master's thesis. The writer can lay claim only to the rather dubious point of "face validity". The items on the survey blank were devised so as to elicit motivational content, the categories were constructed to take into account all responses of a motivational nature, and internal consistency was demonstrated. This, plus the fact that meaningful, significant results were obtained argues in favour of test validity. However the writer appreciates the fact that a demonstration of empirical validity is most essential, particularly in studies that are of a specific rather than exploratory nature. Testing the validity of the scoring categories employed in the present study might provide a problem worthy of investigation in a future master's thesis.

2. Although one might predict the results, it would nevertheless be quite interesting to carry out a somewhat similar type of survey with male subjects to compare the response patterns of men with women. Whereas with women marriage has a striking effect on motivational structure, it is possible that marriage would not be a factor in altering this structure in men. One might also expect considerable sex differences in reference to social acceptability and material goals.

# THE HISTORY OF THE UNITED STATES OF AMERICA

The history of the United States of America is a story of growth and change. It begins with the first settlers, who came to the continent in search of a new life. They found a land of vast resources and a people who were different from them. The settlers and the natives lived together for many years, but there were many conflicts. The settlers wanted to expand their territory, and the natives wanted to protect their land. The conflicts continued for many years, and finally, the settlers won. They took over the land and made it their own. They built a new society, and it grew into a great nation. The United States of America is a country of many people, many languages, and many cultures. It is a country of freedom and opportunity. It is a country where everyone has a chance to succeed. The history of the United States is a story of hope and dreams. It is a story of a people who have built a great nation out of nothing. The United States of America is a country that has inspired the world. It is a country that has shown the world what is possible. The history of the United States is a story that will live on forever.

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## APPENDIX "A"

### SCORING CRITERIA USED BY McCLELLAND IN MEASURING NEED FOR ACHIEVEMENT

McClelland applied the following criteria to analyzing the fantasy stories obtained to several picture stimuli. He defined an achievement goal as the desire for success in competition with some standard of excellence. Achievement imagery was scored as very strong when an individual was competing for the thrill of the competitive activity itself, that is, when winning or doing as well or better than others was the stated and desired goal. Achievement imagery might also be scored even though there was no explicit statement of the desire to win over others providing there was clear affective concern over goal attainment. Meeting self-imposed requirements of good performance was also considered as achievement imagery as this too is competition with some standard of excellence.

In addition to statements of wanting to win over others, achievement imagery might also be expressed by the desire to succeed in an area of unique accomplishment such as through artistic creativity or scientific invention. Here the inference is made that the individual is competing with a standard of excellence. The final area which allows the scoring of need for achievement is long-term or career involvement. Being a success in life, for example, becoming a machinist, doctor, lawyer, successful business man and so forth, are all examples of career involvement which permit the inference of competition with a standard of excellence unless it is made explicit that another goal is primary.

I. Introduction

The purpose of this study is to investigate the effects of the proposed system on the performance of the system.

The study is organized as follows: Chapter 1 introduces the system and the objectives of the study.

Chapter 2 describes the system architecture and the components of the system.

Chapter 3 presents the experimental setup and the results of the experiments.

Chapter 4 discusses the conclusions and the future work.

Chapter 5 provides the references.

Chapter 6 contains the appendix.

Chapter 7 contains the bibliography.

Chapter 8 contains the index.

Chapter 9 contains the list of figures.

Chapter 10 contains the list of tables.

Chapter 11 contains the list of symbols.

Chapter 12 contains the list of abbreviations.

Chapter 13 contains the list of acronyms.

Chapter 14 contains the list of symbols.

Chapter 15 contains the list of tables.

Chapter 16 contains the list of figures.

Chapter 17 contains the list of symbols.

Chapter 18 contains the list of abbreviations.

Chapter 19 contains the list of acronyms.

Chapter 20 contains the list of symbols.

Chapter 21 contains the list of tables.

Chapter 22 contains the list of figures.

APPENDIX "B" (a)

A COPY OF THE SURVEY BLANK EMPLOYED IN THIS STUDY

General Information: Please read and fill in this information very carefully.

Age..... Marital Status .....Single.....Married.....  
Education.....  
If married, state the length of time that you have been married.....  
If you have children please state the age of your oldest child.....  
and your youngest child.....  
Present occupation (for example, housewife, stenographer, student,  
etc. ....  
University women please state;  
    the pattern you are in.....  
    the year of your course .....  
    and the degree toward which you are working.....  
If you are a "working girl", please state the number of years that you  
have been working since you left school.....  
Your nationality (Ethnic Background).....  
Please state the extent of your father's education.....  
and of your mother.....  
In the time between your fourteenth and eighteenth birthdays, how was  
your father employed? What was his occupation during this time?  
.....

DIRECTIONS:

Below are a series of incomplete sentences. You are asked to complete each sentence, filling it in to express as well as possible your own personal feelings. You are asked to take this task seriously, and to give due consideration to each response you make, to see if it really expresses the way you feel. Do not hesitate to reveal your thoughts or feelings, and to be frank, for it is not necessary to sign your name to this paper. Please avoid any attempts to be humorous or flippant.

- 1-I Feel happy when .....
- 2-I worry over .....
- 3-I feel sorry when .....
- 4-I make believe.....







APPENDIX "B" (b)

- 5-I brag about .....  
.....
- 6-I like to.....  
.....
- 7-I wish for .....  
.....
- 8-I feel proud when.....  
.....
- 9-My greatest hope.....  
.....
- 10-Most girls.....  
.....
- 11-My education.....  
.....
- 12-My strongest.....  
.....
- 13-My most important decision was.....  
.....
- 14-If only.....  
.....
- 15-I try hard.....  
.....
- 16-As a woman I.....  
.....
- 17-What I admire most in another person is.....  
.....
- 18-In general the things that men want.....  
.....
- 19-I intend to.....  
.....
- 20-My fondest daydream.....  
.....
- 21-The future.....  
.....
- 22-To me the most important goal in life is.....  
.....

NOTE:

If the space allotted above has not been enough to allow you to complete any of the sentences, please finish them in the space below, but be sure to put down the number of the sentence you are completing.

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APPENDIX "C" (a)

SCORING CRITERIA FOR THE SIX "MOTIVATIONAL"  
CATEGORIES IN THIS STUDY

Category I - Marriage and Family

A response would be placed in this category whenever any one or more of the following conditions are met:

- a. Whenever there is an explicit statement of a desire to marry and/or become a mother.  
  
e.g. I wish for marriage to a man whom I can look up to and children.  
My fondest daydream is to quit work and have a family.  
My greatest hope is someday to find a nice man to be my husband.  
My greatest hope is to get married soon.  
Most girls want a husband.  
I intend to become a successful housewife someday.  
I wish for a happy home and lots of children.  
Most girls wish to marry.  
I wish for a little girl.
- b. Any statement, whether by a person who is already married or by a single person, which indicates that that person is concerned with the proper performing and fulfillment of the duties of marriage now, or in the future.  
  
e.g. My greatest hope is to be a good wife and mother.  
I try hard to maintain a pleasant and happy home.  
My most important decision was my marriage, as its demands as wife and mother have been my first duty ever since.  
My strongest ambition is to be a good helpmate, a companion to my children.  
I try hard to be an efficient homemaker.  
To me the most important goal in life is to keep my husband and children happy.  
My greatest hope is to make successful and good citizens of my children.
- c. Any statement which implies that one's own emotional satisfaction (sense of well being, happiness, or feeling of accomplishment) is now, or will be dependent upon the emotional satisfaction (sense of well being, etc) of the immediate family, i.e. of husband and/or children. This can be inferred in some cases.



APPENDIX "C" (b)

- e.g. I feel happy when my family is well and happy.  
I worry over everything that threatens the welfare of husband, children and grandchildren.  
My greatest hope is that my children will lead an honest and useful life.  
I worry over sickness in the family.  
My strongest desire is to see my son graduate from university one day.
- d. Any statement indicating that one's "usefulness" as a human being is in the fulfillment of the role of wife and mother (the nurturing role). It may be pointed out that the person may or may not have any specific desire to marry and have children, indeed may not even be attracted by marriage, but nevertheless sees marriage as the proper way to fulfill one's role in society. Here marriage is truly seen as a duty rather than a way to personal happiness, it is thought of as the universal goal of women.
- e.g. As a woman I believe motherhood to be our greatest challenge and opportunity for useful work.
- e. Any statements which definitely indicate a maternalistic attitude or concern toward someone, or a maternal pride.
- e.g. I worry over my children's' seeming lack of responsibility.  
I feel proud when I introduce my husband and family.  
I brag about my children.....(my children's accomplishments in the field of music, etc.)  
I feel proud when my husband or children have achieved their goals no matter how small.  
To me the most important goal in life is to see my family grow up to be good citizens.  
I feel sorry when I see neglected children especially when poverty is the cause.
- f. A statement by married person that marrying was their most important, valued, or wisest decision.
- e.g. My most important decision was to marry the man I love.  
My most important decision was in choosing the man I married.





APPENDIX "C" (c)

- g. Any statements which indicate that a person wants "something", regardless of what, providing that this something is seen as an aid to attaining the final goal - marriage. Therefore, the desire to learn, to improve oneself, to be attractive, alluring, exciting, etc. can be scored in this category of "marriage and family" providing that there is a definite evidence that the person views these things as the means to an end, i.e. as a way to attaining or enriching the marriage relationship.
- e.g. Most girls like to be attractive, popular, capable, and married no doubt.  
I wish for beauty and poise so as to attract the man I love.  
I worry over not being pretty, for it means less chance of getting married.
- h. Marriage for companionship.





## APPENDIX "C" (d)

### Category II - Social Acceptability

The need for social acceptability may be thought of as the need to be liked by others, the need to win the approval and affection of others in general. In winning the approval and approbation of others, the person often sees himself as having gained status.

Statements would be placed in this category whenever any one or more of the following conditions are met:

- a. Any direct statements indicating a desire to be liked, popular, admired, or needed by others.

e.g. Most girls are wonderful friends and personally I'd hate to be without them.  
My strongest desire is to be well liked and helpful to others.  
Most girls want to be attractive and to be loved.  
As a woman I like to feel needed and important to people.  
To me the most important goal in life is to be happy and have lots of good friends.  
I make believe that I am pretty, talented, and therefore very popular.

- b. Any statements which indicate that the person goes out of her way to get along with others, to be pleasant to others, will be considered by inference to indicate her need to be liked.

e.g. I try hard to make friends and get along with other people.  
My strongest motivating force is the desire to avoid any friction or unpleasantness in my relationship with other people.  
I try hard to be unfailingly pleasant, gracious, and understanding to everyone with whom I come in contact.

- c. Any statements which indicate concern over lack of friends, admiration, popularity, etc., or worry or concern over what other people think of you are scored here.

e.g. I worry over other people's feelings about me.  
I worry over the fact that maybe someone won't like me and this bothers me a great deal.  
I feel proud when I receive a sincere compliment.

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Section II - II

1. The first part of the document is a list of the names of the persons who have been appointed to the various positions in the organization. The names are listed in alphabetical order, and each name is followed by the position to which the person has been appointed. The list is as follows:

1. Mr. A. B. C. - President

2. Mr. D. E. F. - Vice President

3. Mr. G. H. I. - Secretary

4. Mr. J. K. L. - Treasurer

5. Mr. M. N. O. - Chairman of the Board

6. Mr. P. Q. R. - Chairman of the Committee on Finance

7. Mr. S. T. U. - Chairman of the Committee on Education

8. Mr. V. W. X. - Chairman of the Committee on Social Service

9. Mr. Y. Z. A. - Chairman of the Committee on Public Relations

10. Mr. B. C. D. - Chairman of the Committee on Internal Affairs

11. Mr. E. F. G. - Chairman of the Committee on External Affairs

12. Mr. H. I. J. - Chairman of the Committee on Research and Development

13. Mr. K. L. M. - Chairman of the Committee on Production and Distribution

14. Mr. N. O. P. - Chairman of the Committee on Sales and Marketing

15. Mr. Q. R. S. - Chairman of the Committee on Administration and Management

16. Mr. T. U. V. - Chairman of the Committee on Legal and General Counsel

17. Mr. W. X. Y. - Chairman of the Committee on Public Health and Safety

18. Mr. Z. A. B. - Chairman of the Committee on Labor Relations

19. Mr. C. D. E. - Chairman of the Committee on Environmental Protection

20. Mr. F. G. H. - Chairman of the Committee on International Relations

21. Mr. I. J. K. - Chairman of the Committee on Cultural and Artistic Activities

22. Mr. L. M. N. - Chairman of the Committee on Sports and Recreation

23. Mr. O. P. Q. - Chairman of the Committee on Music and Performing Arts

24. Mr. R. S. T. - Chairman of the Committee on Literature and Publishing

25. Mr. U. V. W. - Chairman of the Committee on Film and Television

26. Mr. X. Y. Z. - Chairman of the Committee on Radio and Broadcasting

27. Mr. A. B. C. - Chairman of the Committee on Press and Publicity

28. Mr. D. E. F. - Chairman of the Committee on Information and Communications

29. Mr. G. H. I. - Chairman of the Committee on Transportation and Travel

30. Mr. J. K. L. - Chairman of the Committee on Housing and Urban Development

31. Mr. M. N. O. - Chairman of the Committee on Energy and Power

32. Mr. P. Q. R. - Chairman of the Committee on Agriculture and Forestry

33. Mr. S. T. U. - Chairman of the Committee on Fisheries and Aquaculture

34. Mr. V. W. X. - Chairman of the Committee on Wildlife and Conservation

35. Mr. Y. Z. A. - Chairman of the Committee on Parks and Recreation

36. Mr. B. C. D. - Chairman of the Committee on Museums and Historic Sites

37. Mr. E. F. G. - Chairman of the Committee on Libraries and Archives

38. Mr. H. I. J. - Chairman of the Committee on Cultural Heritage

39. Mr. K. L. M. - Chairman of the Committee on Language and Linguistics

40. Mr. N. O. P. - Chairman of the Committee on Literature and Language Arts

41. Mr. Q. R. S. - Chairman of the Committee on Music and Music Education

42. Mr. T. U. V. - Chairman of the Committee on Visual Arts and Design

43. Mr. W. X. Y. - Chairman of the Committee on Performing Arts and Theater

44. Mr. Z. A. B. - Chairman of the Committee on Film and Video Arts

45. Mr. C. D. E. - Chairman of the Committee on Radio and Audio Arts

46. Mr. F. G. H. - Chairman of the Committee on Television and Video Arts

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APPENDIX "C" (e)

- d. Any statements which indicate affective loading in regard to friends. Often this affective quality is not stated, but can be inferred.
- e.g. I feel happy when I am with a small group of friends.  
I feel proud when I have done something to please those I like.  
I feel happy when I am with friends with whom I am congenial.  
I feel happy when I am able to please my parents in regard to marks.  
I feel happy when I am with people I like and who like me.



APPENDIX "C" (f)

Category III - Career.

Any statements expressing a desire for, or interest in a career are scored here. Some statements may not indicate a real desire, but more a fantasy which the person enjoys. Whether the statement indicates a genuine desire for a career or merely an enjoyable daydream, it is scored here. The person does not need to indicate that he is working toward this career goal, but only that it attracts him.

- e.g. I make believe I am a renowned pianist when watching a concert pianist perform.  
If only I had achieved more in my second chief interest - writing, so that a few of my poems would be worthy to live.  
My fondest day dream is to be an air-stewardess and travel to many different parts of the world.  
My most important decision was my choice of a career.  
My most important decision was choosing my employment.





## APPENDIX "C" (g)

### Category IV - Self-Improvement

Included here are any statements which indicate a desire to achieve a fuller realization of self, and fuller development of one's talents or potentialities. The concern may be with improving one's educational standards, appearance, social poise, personality, understanding, state of mind, spirituality, etc. However, it must be felt that these "improvements" are desired for their own inherent value, and not as a direct aid in fulfilling marriage, career, or social aspirations. If there is any indication that the person desires to improve self in order to enhance chances at marriage, or career for example, then the statement would be categorized either in category I or II. Again there does not need to be evidence that the person is actually working toward improvement of self, but only that he wishes for it.

e.g. I try hard to be unselfish.  
I intend to try harder to be more patient.  
My greatest hope is that in the coming years I may realize the highest expression of self possible.  
I try hard to be more organized in my thinking and doing.  
I intend to keep on learning and practicing in this lifetime in the hope of evolving to some greater degree.  
To me the most important goal in life is self-improvement.  
I make believe I have more ambition and energy than I have.  
If only I could get myself organized to be more efficient.  
I wish for qualities such as integrity and loyalty.  
My greatest hope is to develop my mind and my personality so that in time I may achieve my ideal of a woman of grace, tact, and understanding.  
My strongest wish is to understand life.  
My education means a great deal to me. I want to be much more educated and never stop learning.

Direct statements which express the wish that one did not have certain faults may be taken by inference to indicate that she wished to improve in this respect.

e.g. My strongest fault is jumping to conclusions and judging before I know all the circumstances.



APPENDIX "C" (h)

Category V - Material Goals

Certain responses indicate that the person's aspirations, dreams, and achievement wishes are of a material nature. The things some people want most in life are concrete, tangible things. Sometimes these material goals are seen as status symbols and are desired for this reason while others value them in and for themselves. Any statement indicating a desire for, or a concern about expensive clothes, a car, house, money, "financial security", wealth, etc. belong in this category.

- e.g. I wish for a home of our own that has a den, fireplace, basement, garage, etc.  
I worry over financial problems.  
My fondest daydream is of making a lot of money, and buying everything I could never buy.  
I make believe that I'm rich.  
I wish for a car of my own.  
My greatest hope is to be independent in my old age.  
My fondest daydream is to have servants.

( ) 1

## APPENDIX "C" (i)

### Category VI - Competitive Success

This category will be defined exactly as David McClelland defines his "achievement imagery" for men, and it is included in the scoring set-up in order to allow a basis of comparison with McClelland's findings.

Competition as used here will refer to competition with some standard of excellence. The statement does not need to imply that the person is successful in competition, but only that he is concerned about competitive success. Statements fall in this category only when one of the criteria listed below is met:

- a. A statement indicating that winning or doing as well as or better than others is desired.

e.g. I brag about only the things in which I excel others.  
If only I could improve my class standing I would be so happy.

- b. The desire to win or do better than others is not explicitly stated, but there is affective concern over attaining a goal which involves competition with a standard of excellence. In some cases the affective concern may be inferred if the person makes a statement that he puts a great deal of effort into doing something which involves competition.

e.g. I feel proud when I have accomplished something like passing a test.  
I worry over low marks in exams.  
I intend to study morning, noon and night before the coming mid-terms. (The effort expended here may be taken to indicate affective concern.)

- c. Statements in which the person expresses a desire to achieve extraordinary accomplishments such as inventing something new and unique, or creating an artistic masterpiece. This is not a normal career response, but a desire to achieve something no one else has achieved.

N.B. It is to be noted that McClelland also includes "Long term involvement" as a criteria for scoring achievement imagery. However, "Long term involvement" may be considered equivalent to career involvement, and this has already been handled in a separate "career" category in this study.





# AGE AS A FACTOR INFLUENCING MOTIVATIONAL PATTERNS IN WOMEN

The Comparison is between "Younger" Married Women (17 to 38 years of age) and "Older" Married Women (39 to 60 years of age) as to the Relative Importance of the Following Goals:

TABLE 6. Marriage and Family.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>	(fo-fe) <sup>2</sup> /fe
	"Younger" "Older"		"Younger" "Older"		"Younger" "Older"		"Younger" "Older"	"Older"
Individuals for whom marriage obtained a rank of one.	90.5	40.5	90.1	40.9	.4	-.4	.16	.0018
								.0039
Individuals for whom marriage did not rank first.	19.5	9.5	19.9	9.1	-.4	.4	.16	.0080
								.0176
	110.0	50.0	110.0	50.0	0.0	0.0	-	.0098
	Difference Not Significant							.0215
	x <sup>2</sup> = .0313							

TABLE 7. Social Acceptability.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>	(fo-fe) <sup>2</sup> /fe
	"Younger" "Older"		"Younger" "Older"		"Younger" "Older"		"Younger" "Older"	"Older"
Individuals who ranked low, i. e. 3.5 to 6.0.	54	24	53.6	24.4	.4	-.4	.16	.0028
								.0066
Individuals who ranked high, i. e. 1.0 to 3.0.	56	26	56.4	25.6	-.4	.4	.16	.0028
								.0063
	110.0	50.0	110.0	50.0	0.0	0.0	-	.0056
	Difference Not Significant							.0129
	x <sup>2</sup> = .0185							



THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

( )

1911

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TABLE 8. Career.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>	(fo-fe) <sup>2</sup> /fe
	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"
Individuals who ranked low, i.e. ranks falling above the median (5.0 to 6.0)	75	32	73.6	33.4	1.4	-1.4	1.96	.026
								.059
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 4.5)	18	36.4	16.6	1.4	1.4	1.96	.054	.118
	110.0	50.0	110.0	50.0	0.0	0.0	-	.080
	Difference Not Significant							$\chi^2 = .257$

TABLE 9. Self-Improvement.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>	(fo-fe) <sup>2</sup> /fe
	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"
Individuals who ranked low, i.e. ranks falling above the median (3.5 to 6.0)	47	28	51.6	23.4	-4.6	4.6	21.16	.410
								.904
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 3.0)	63	22	58.4	26.6	4.6	-4.6	21.16	.362
								.795
	110.0	50.0	110.0	50.0	0.0	0.0	-	.772
	Difference Not Significant							$\chi^2 = 2.471$



TABLE 10. Material Goals.

	fo	fe	fo-fe	(fo-fe) <sup>2</sup>	(fo-fe) <sup>2</sup> /fe
	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"	"Younger" "Older"
Individuals who ranked low, i. e. ranks falling above the median (3.5 to 6.0)	58 27	58.4 26.6	-.4 .4	.16	.0027 .0060
Individuals who ranked high, i. e. ranks falling below the median (1.0 to 3.0)	52 23	51.6 23.4	.4 -.4	.16	.0031 .0068
	110.0 50.0	110.0 50.0	0.0 0.0	-	.0058 .0128
Difference Not Significant					
$\chi^2 = .0186$					

TABLE 11. Competitive Success

fo		fe		fo-fe		(fo-fe) <sup>2</sup>	(fo-fe) <sup>2</sup> /fe
"Younger"	"Older"	"Younger"	"Older"	"Younger"	"Older"		"Younger"
Individuals who ranked low, i.e. ranks falling above the median (3.5 to 6.0)							
44	20	44	20	0.0	0.0	0.0	0.0
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 3.0)							
66	30	66	30	0.0	0.0	0.0	0.0
110.0	50.0	110.0	50.0	0.0	0.0	-	0.0
No Difference							



# COMPARISON BETWEEN FEMALE FIRST-YEAR UNIVERSITY STUDENTS AND SINGLE BUSINESS WOMEN

TABLE 12. Marriage and Family.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	University	Business	University	Business	University	Business	University	Business	University	Business
Individuals who ranked low, i.e. ranks falling above the median (3.0 to 6.0)	18	19	15.9	21.1	2.1	-2.1	4.41		.277	.209
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 2.5)	12	21	14.1	18.9	-2.1	2.1	4.41		.313	.233
	30.0	40.0	30.0	40.0	0.0	0.0	-		.590	.442
Difference Not Significant										
x <sup>2</sup> = 1.032										

TABLE 13. Social Acceptability.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	University	Business	University	Business	University	Business	University	Business	University	Business
Individuals who ranked low, i.e. ranks falling above the median (2.0 to 6.0)	20	21	17.6	23.4	2.4	-2.4	5.76		.327	.246
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 1.5)	10	19	12.4	16.6	-2.4	2.4	5.76		.465	.347
	30.0	40.0	30.0	40.0	0.0	0.0	-		.792	.593
Difference Not Significant										
x 1.385										





TABLE 14. Career.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	University	Business	University	Business	University	Business	University	Business	University	Business
Individuals who ranked low, i.e. ranks falling above the median (4.5 to 6.0)	15	26	17.6	23.4	-2.6	2.6	6.76	6.76	.384	.289
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 4.0)	15	14	12.4	16.6	2.6	-2.6	6.76	6.76	.545	.407
	30.0	40.0	30.0	40.0	0.0	0.0	-	-	.929	.696
Difference Not Significant										
										$\chi^2 = 1.625$

TABLE 15. Self-Improvement.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	University	Business	University	Business	University	Business	University	Business	University	Business
Individuals who ranked low, i.e. ranks falling above the median (3.5 to 6.0)	17	19	15.4	20.6	1.6	-1.6	2.56	2.56	.166	.124
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 3.0)	13	21	14.6	19.4	-1.6	1.6	2.56	2.56	.175	.132
	30.0	40.0	30.0	40.0	0.0	0.0	-	-	.341	.256
Difference Not Significant										
										$\chi^2 = .597$



TABLE 16. Material Goals.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	University	Business	University	Business	University	Business	University	Business	University	Business
Individuals who ranked low, i.e. ranks falling above the median (5.0 to 6.0)	24	18	18	24	6	-6	36	2.00	1.50	
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 4.5)	6	22	12	16	-6	6	36	3.00	2.25	
	30.0	40.0	30.0	40.0	0.0	0.0	-	5.00	3.75	
Difference significant at the 1% level of confidence.										
$\chi^2 = 8.75$										

TABLE 17. Competitive Success

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	University	Business	University	Business	University	Business	University	Business	University	Business
Individuals who ranked low, i.e. ranks falling above the median (4.0 to 6.0)	9	29	16.3	21.7	-7.3	7.3	53.29	3.269	2.456	
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 3.5)	21	11	13.7	18.3	7.3	-7.3	53.29	3.890	2.912	
	30.0	40.0	30.0	40.0	0.0	0.0	-	7.159	5.368	
Difference significant at the 1% level of confidence.										
$\chi^2 = 12.527$										



COMPARISONS BETWEEN MARRIED WOMEN AND  
FEMALE FIRST-YEAR UNIVERSITY STUDENTS

TABLE 18. Marriage and Family.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Married	University	Married	University	Married	University	Married	University	Married	University
Individuals for whom marriage obtained a rank of one.	130.5	6.5	115.4	21.6	15.1	-15.1	228.01	1.976	10.556	
Individuals for whom marriage did not rank first.	29.5	23.5	44.6	8.4*	-15.1	15.1	228.01	5.112	27.114	
	160.0	30.0	160.0	30.0	0.0	0.0	-	7.088	37.670	

Difference significant at the 1% level of confidence

\* Yates correction applied.

TABLE 19. Social Acceptability.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Married	University	Married	University	Married	University	Married	University	Married	University
Individuals who ranked low, i.e. ranks falling above the median (3.0 to 6.0)	108	9	98.5	18.5	9.5	-9.5	90.25	.916	4.878	
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 2.5)	52	21	61.5	11.5	-9.5	9.5	90.25	1.467	7.848	
	160.0	30.0	160.0	30.0	0.0	0.0	-	2.383	12.726	

Difference significant at the 1% level of confidence

$$x^2 = 15.109$$

$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \quad (1)$$

Let  $\mathbf{A}$  be a matrix in  $M_n(\mathbb{R})$ . Then  $\mathbf{A}$  is symmetric if and only if  $\mathbf{A}^T = \mathbf{A}$ .

Let  $\mathbf{A}$  be a matrix in  $M_n(\mathbb{R})$ . Then  $\mathbf{A}$  is skew-symmetric if and only if  $\mathbf{A}^T = -\mathbf{A}$ .

Let  $\mathbf{A}$  be a matrix in  $M_n(\mathbb{R})$ . Then  $\mathbf{A}$  is orthogonal if and only if  $\mathbf{A}^T = \mathbf{A}^{-1}$ .

Let  $\mathbf{A}$  be a matrix in  $M_n(\mathbb{R})$ . Then  $\mathbf{A}$  is idempotent if and only if  $\mathbf{A}^2 = \mathbf{A}$ .

\*

Let  $\mathbf{A}$  be a matrix in  $M_n(\mathbb{R})$ . Then  $\mathbf{A}$  is invertible if and only if  $\det(\mathbf{A}) \neq 0$ .

Let  $\mathbf{A}$  be a matrix in  $M_n(\mathbb{R})$ . Then  $\mathbf{A}$  is nilpotent if and only if  $\mathbf{A}^k = \mathbf{0}$  for some  $k \in \mathbb{N}$ .

Let  $\mathbf{A}$  be a matrix in  $M_n(\mathbb{R})$ . Then  $\mathbf{A}$  is diagonalizable if and only if there exists a basis of  $\mathbb{R}^n$  consisting of eigenvectors of  $\mathbf{A}$ .

Let  $\mathbf{A}$  be a matrix in  $M_n(\mathbb{R})$ . Then  $\mathbf{A}$  is similar to a diagonal matrix if and only if  $\mathbf{A}$  is diagonalizable.

Let  $\mathbf{A}$  be a matrix in  $M_n(\mathbb{R})$ . Then  $\mathbf{A}$  is similar to a Jordan matrix if and only if  $\mathbf{A}$  is similar to a matrix in Jordan normal form.



TABLE 20. Career.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Married	University	Married	University	Married	University	Married	University	Married	University
Individuals who ranked low, i.e. ranks falling above the median (5.0 to 6.0)	107	12	100.2	18.8	6.8	- 6.8	46.24	.461	2.460	2.460
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 4.5)	53	18	59.8	11.2	- 6.8	6.8	46.24	.773	4.129	4.129
	160.0	30.0	160.0	30.0	0.0	0.0	-	1.234	6.589	6.589
Difference significant at the 1% level of confidence.										
	$\chi^2 = 7.823$									

TABLE 21. Self-Improvement.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Married	University	Married	University	Married	University	Married	University	Married	University
Individuals who ranked low, i.e. ranks falling above the median (3.5 to 6.0)	76	17	78.3	14.7	- 2.3	2.3	5.29	.068	.360	.360
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 3.0)	84	13	81.7	15.3	2.3	- 2.3	5.29	.065	.346	.346
	160.0	30.0	160.0	30.0	0.0	0.0	-	.133	.706	.706
Difference Not significant.										
	$\chi^2 = .839$									



$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \chi$$

$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

TABLE 22. Material Goals.

	fo	fe		fo-fe	(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe		
	Married	University	Married University	Married University	Married	University	Married University		
Individuals who ranked low, i. e. ranks falling above the median (4.0 to 6.0)	61	28	74.9	14.1	- 13.9	13.9	193.21	2.580	13.703
Individuals who ranked high, i. e. ranks falling below the median (1.0 to 3.5)	99	2	85.1	15.9	13.9	- 13.9	193.21	2.270	12.152
	160.0	30.0	160.0	30.0	0.0	0.0	-	4.850	25.855
Difference significant at the 1% level of confidence.									
x <sup>2</sup> = 30.705									

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TABLE 23. Competitive Success.

	fo	fe		fo-fe	(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe		
	Married	University	Married	University	Married	University	Married	University	
Individuals who ranked low, i. e. ranks falling above the median (5.0 to 6.0)	118	7	105.3	19.7	12.7	- 12.7	161.29	1.532	8.187
Individuals who ranked high, i. e. ranks falling below the median (1.0 to 4.5)	42	23	54.7	10.3	- 12.7	12.7	161.29	2.949	15.659
	160.0	30.0	160.0	30.0	0.0	0.0	-	4.481	23.846
Difference significant at the 1% level of confidence.									
								x <sup>2</sup> =	28.327

 $\chi^2 = 28.327$



# COMPARISONS BETWEEN MARRIED WOMEN AND UNMARRIED BUSINESS WOMEN

TABLE 24. Marriage and Family.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Married	Business	Married	Business	Married	Business	Married	Business	Married	Business
Individuals for whom marriage obtained a rank of one	130	12	113.6	28.4	16.4	- 16.4	286.96		2.526	10.104
Individuals for whom marriage did not rank first	30	28	46.4	11.6	- 16.4	16.4	286.96		6.184	24.738
	160.0	40.0	160.0	40.0	0.0	0.0	-		8.710	34.842
Difference significant at the 1% level of confidence.										

TABLE 25. Social Acceptability.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Married	Business	Married	Business	Married	Business	Married	Business	Married	Business
Individuals who ranked low, i.e. ranks falling above the median (3.0 to 6.0)	108	11	95.2	23.8	12.8	- 12.8	163.84		1.721	6.884
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 2.5)	52	29	64.8	16.2	- 12.8	12.8	163.84		2.528	10.114
	160.0	40.0	160.0	40.0	0.0	0.0	-		4.249	16.998
Difference significant at the 1% level of confidence.										

$$x^2 = 21.247$$









TABLE 28. Material Goals.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Married	Business	Married	Business	Married	Business	Married	Business	Married	Business
Individuals who ranked low, i.e. ranks falling above the median (3.5 to 6.0)	83	28	88.8	22.2	- 5.8	5.8	33.64		.379	1.515
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 3.0)	77	12	71.2	17.8	5.8	- 5.8	33.64		.472	1.890
	160.0	40.0	160.0	40.0	0.0	0.0	-		.851	3.405
Difference significant at the 5% level of confidence.										
$\chi^2 = 4.256$										

TABLE 29. Competitive Success.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Married	Business	Married	Business	Married	Business	Married	Business	Married	Business
Individuals who ranked low, i.e. ranks falling above the median (5.0 to 6.0)	118	18	108.8	27.2	9.2	- 9.2	84.64		.778	3.112
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 4.5)	42	22	51.2	12.8	- 9.2	9.2	84.64		1.653	6.613
	160.0	40.0	160.0	40.0	0.0	0.0	-		2.431	9.725
Difference significant at the 1% level of confidence.										
$\chi^2 = 12.156$										



COMPARISONS BETWEEN MARRIED WOMEN HAVING HIGHER EDUCATION  
AND MARRIED WOMEN WITHOUT HIGHER EDUCATION

TABLE 30. Marriage and Family.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.
Individuals for whom marriage obtained a rank of one	59	72	58.1	72.9	.9	-.9	.81	.014	.011	.011
Individuals for whom marriage did not rank first	12	17	12.9	16.1	-.9	.9	.81	.063	.050	.050
	71.0	89.0	71.0	89.0	0.0	0.0	-	.077	.061	.061
Difference Not significant.										
x <sup>2</sup> = .138										

TABLE 31. Social Acceptability.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.
Individuals who ranked low, i.e. ranks falling above the median (3.5 to 6.0)	33	45	34.6	43.4	-1.6	1.6	2.56	.074	.059	.059
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 3.0)	38	44	36.4	45.6	1.6	-1.6	2.56	.070	.056	.056
	71.0	89.0	71.0	89.0	0.0	0.0	-	.144	.115	.115
Difference Not significant.										
x <sup>2</sup> = .259										



TABLE 32. Career.

	fo	fe	fo-fe	(fo-fe) <sup>2</sup>	(fo-fe) <sup>2</sup> /fe				
	Univer. Non-Univer.	Univer. Non-Univer.	Univer. Non-Univer.	Univer. Non-Univer.	Univer. Non-Univer.				
Individuals who ranked low, i.e. ranks falling above the median (5.0 to 6.0)	45	62	47.5	59.5	- 2.5	2.5	6.25	.132	.105
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 4.5)	26	27	23.5	29.5	2.5	- 2.5	6.25	.266	.212
	71.0	89.0	71.0	89.0	0.0	0.0	-	.398	.317
	Difference Not significant.								
	$\chi^2 = .715$								

### TABLE 33. Self-Improvement.

fo		fe		fo-fe		$(fo-fe)^2$	$(fo-fe)^2/fe$
Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.
Individuals who ranked low, i.e. ranks falling above the median (3.5 to 6.0)							
31	43	32.8	41.2	- 1.8	1.8	3.24	.079
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 3.0)							
40	46	38.2	47.8	1.8	- 1.8	3.24	.068
71.0	89.0	71.0	89.0	0.0	0.0	-	.147
Difference Not significant.							$\chi^2 = .331$





TABLE 34. Material Goals.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.
Individuals who ranked low, i.e. ranks falling above the median (3.5 to 6.0)	47	38	37.7	47.3	9.3	- 9.3	86.49	2.294	1.829	
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 3.0)	24	51	33.3	41.7	- 9.3	9.3	86.49	2.597	2.074	
-	71.0	89.0	71.0	89.0	0.0	0.0	-	4.891	3.903	
Difference significant at the 1% level of confidence.										
									$\chi^2 = 8.794$	

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TABLE 35. Competitive Success.

	fo		fe		fo-fe		(fo-fe) <sup>2</sup>		(fo-fe) <sup>2</sup> /fe	
	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.	Univer.	Non-Univer.
Individuals who ranked low, i.e. ranks falling above the median (5.0 to 6.0)	55	63	52.4	65.6	2.6	- 2.6	6.76	.129	.103	
Individuals who ranked high, i.e. ranks falling below the median (1.0 to 4.5)	16	26	18.6	23.4	- 2.6	2.6	6.76	.363	.289	
-	71.0	89.0	71.0	89.0	0.0	0.0	-	.492	.392	
Difference Not significant.										
									$\chi^2 = .884$	





















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